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# Balsam Poplar

(*Populus tacamahacca*) <sup>1</sup>

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Balsam poplar is a soft, weak wood of comparatively little commercial importance, used principally for shipping containers and pulpwood. When cut into lumber, it is frequently sold in mixture with aspen and cottonwood under the name "cottonwood." When cut for pulpwood, it is commonly included with aspen and both together classed as "poplar." The tree is often called "Balm-of-Gilead"<sup>2</sup> on account of the reputed healing properties of the fragrant balsam which covers the buds and young leaves. Balsam poplar is widely distributed in Canada and Alaska. In the United States it occurs principally in New England and the Lake States and to a less extent in the Rocky Mountains as far south as Colorado. It generally grows in moist locations in mixture with the spruces, alders, and willows. The stand of balsam poplar timber appears ample to meet the present demand.

**Nomenclature.**—Balsam poplar is also known as Balm-of-Gilead, balsam, cottonwood, poplar (Lake States), and tacamahac.

**Distribution and growth.**—Balsam poplar grows principally in Canada and Alaska. Its range in the United States includes New England, New York, the Lake States, Idaho, western Montana, Wyoming, and the mountains of Colorado (see fig. 1). It is distinctly a northern tree, and parts of its range are characterized by a short growing season and long, severe winters with temperatures as low as 50° to 70° below zero—conditions too severe for the existence of most other trees. It is confined mainly to alluvial bottom lands and to the borders of swamps in moist, gravelly soils. Seeds are abundant and are scattered widely by the wind. The balsam poplar that grows in the United States is in the southernmost limit of its distribution and is by no means as large as the tree that grows farther north. In Canada under favorable conditions balsam poplar sometimes reaches a height of 100 feet and a diameter of 6 feet. In the United States it does not often reach a height of over 70 feet

<sup>1</sup> Often designated as *P. balsamifera*, a name of uncertain application rejected by most present-day botanists.

<sup>2</sup> The name "Balm-of-Gilead," while in use for the typical form of the species (*P. tacamahacca*), is preferably restricted to the variety *P. tacamahacca candicans*.

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or a diameter over 30 inches. Trees from 40 to 50 years old are generally from 14 to 17 inches in diameter.

**Supply.**—The total stand of balsam poplar saw timber in the United States is estimated very roughly at 500,000,000 board feet.<sup>3</sup> It is located in the Lake States and the Northeast. The stand of balsam poplar is much smaller than that of aspen especially if both saw timber and cordwood are included.

**Production.**—Balsam poplar lumber is produced chiefly in the Lake States and in the Northeastern States. In the lumber cut statistics of the Bureau of the Census the term "cottonwood" includes the cottonwoods, aspens, and balsam poplar. The average annual production of cottonwood lumber in recent years was approximately 153,000,000 board feet. Of this amount approximately 30,000,000 board feet came from Minnesota and was practically all aspen and balsam poplar, and about 18,000,000 came from the other two Lake States and the Northeast and was largely aspen and balsam poplar. If an allowance is made for the production of aspen and balsam poplar lumber in the Central States, the average annual production of the two species in recent years in the eastern part of the United States will approximate 51,000,000 board feet, of which one-quarter or 13,000,000 board feet was probably balsam poplar.

Under the term "poplar" as used in pulpwood statistics<sup>4</sup> are included aspen and a comparatively small amount of balsam poplar. The annual consumption of poplar pulpwood in recent years has been approximately 350,000 cords. It is estimated that 5 percent of this or 17,500 cords, equivalent to approximately 5,250,000 board feet, was balsam poplar. Small but indeterminate quantities of balsam poplar are also used for excelsior.

The total annual cut of balsam poplar in recent years for all purposes is estimated very roughly at 20,000,000 board feet.

**Properties.**—The heartwood of balsam poplar is light brown and the thick sapwood nearly white. The wood is light in weight,<sup>5</sup> soft, and weak. It is easily worked and rather uniform in texture. It is reported to have little tendency to split in nailing but to be low in nail-holding ability.<sup>6</sup> It is also reported to require considerable care in seasoning in order to overcome a tendency to twist and warp.<sup>6</sup> Balsam poplar wood is not durable in exposed situations and decays quickly in contact with the soil. The wood has excellent pulping qualities and is well suited for paper making both by the sulfite and soda processes.

**Principal uses.**—Balsam poplar is used principally for box and crate lumber and for pulpwood in the manufacture of paper. A limited amount of the lumber goes into the manufacture of small containers for druggists' supplies, and some of the high-grade logs

<sup>3</sup> UNITED STATES CONGRESS, JOINT COMMITTEE ON FORESTRY. FOREST LANDS OF THE UNITED STATES. 77th Cong., 1st sess., Senate Doc. 32, 44 pp. 1941. The combined stand of aspen, cottonwood, and balsam poplar of saw-timber size in the eastern part of the United States was roughly estimated in 1938 at over 8,000,000,000 board feet. Of this stand, it is probable that cottonwood makes up about 5,000,000,000 board feet, aspen about one-half of that amount, and balsam poplar the remainder.

In a report entitled "Forest Resources, Problems, and Solutions of the Four Columbia Basin States," prepared by the U. S. Forest Service in 1938, no mention is made of the stand of balsam poplar. The States included were Washington, Oregon, Idaho, and Montana. It is assumed that the stand of balsam poplar saw timber in the Western States is negligible.

<sup>4</sup> Bureau of the Census.

<sup>5</sup> The average weight of balsam poplar in a thoroughly air-dry condition (12 percent moisture) is 23 pounds per cubic foot.

<sup>6</sup> No definite information available.

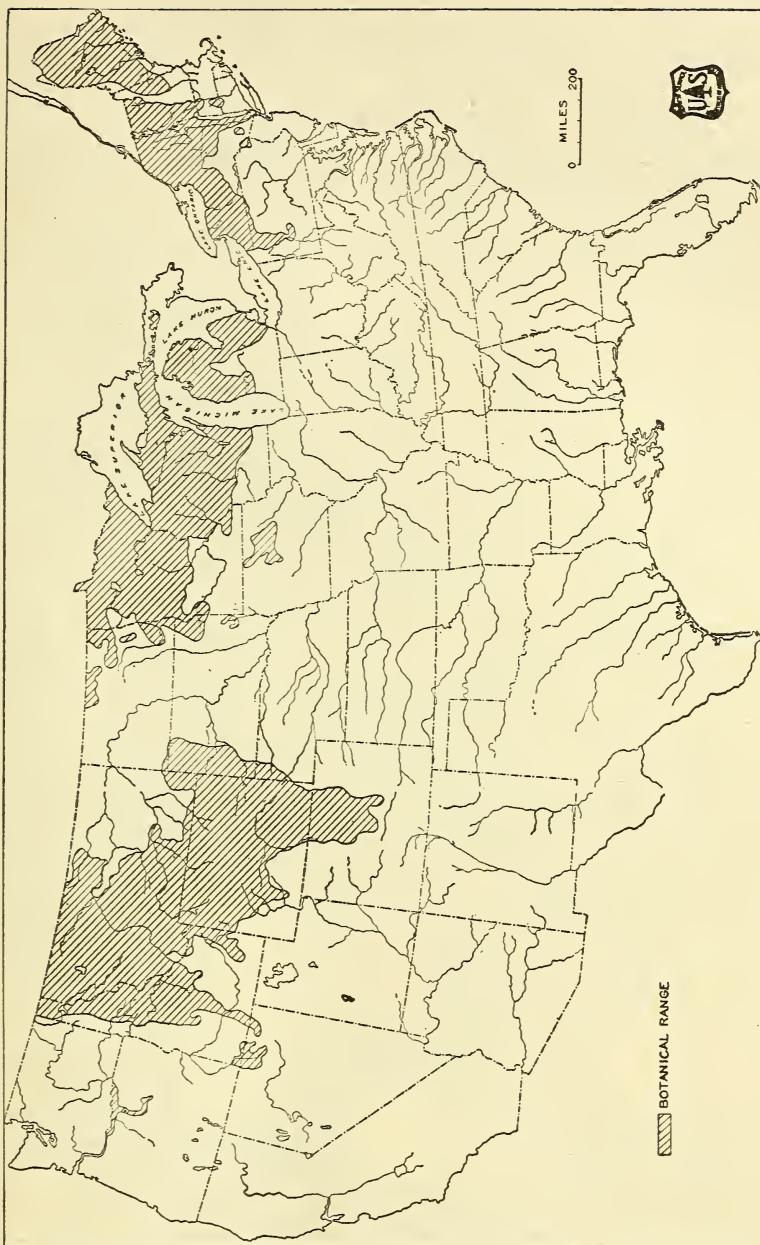


FIGURE 1.—Range of balsam poplar (*Populus tremuloides*).

are cut into veneer from which various kinds of fruit baskets are made. A small amount of balsam poplar is also used for making excelsior. The medicinal "Balm-of-Gilead," or Populi Gemma of the drug trade, is derived from the buds of both balsam poplar and its variety *P. tacamahacca candicans*. It is used as a constituent of cough medicine.

## REFERENCES

AMERICAN FOREST TREES. H. H. GIBSON. 708 pp., illus. Chicago. 1913.  
BALM OF GILEAD. Hardwood Rec. Aug. 25, 1908.  
FOREST TREES OF THE PACIFIC SLOPE. G. B. SUDWORTH. U. S. Dept. Agr. Unnum. Pub., 441 pp., illus. 1908.  
THE POPLARS. Canad. Forestry Jour. 1:120-123, illus. 1905.  
TREES OF NORTHEASTERN UNITED STATES. H. P. BROWN. Rev. and enl., 490 pp., illus. Boston. 1938.